

DEPARTMENT of ENVIRONMENTAL SERVICES  
Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: CAPTAIN POND	Lake Area (ha): 36.54
Town: SALEM	Maximum depth (m): 8.6
County: Rockingham	Mean depth (m): 2.5
River Basin: Merrimack	Volume (m <sup>3</sup> ): 874000
Latitude: 42°48'30" N	Relative depth: 1.3
Longitude: 71°10'22" W	Shore configuration: 1.24
Elevation (ft): 156	Areal water load (m/yr): 5.28
Shore length (m): 2600	Flushing rate (yr <sup>-1</sup> ): 2.10
Watershed area (ha): 388.5	P retention coeff.: 0.65
% watershed ponded: 0.0	Lake type: natural

BIOLOGICAL:

19 February 2003

28 August 2002

DOM. PHYTOPLANKTON (% TOTAL)	#1	COELOSPHAERIUM 85%	COELOSPHAERIUM 50%
	#2		CERATIUM 12%
	#3		
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			4.72
DOM. ZOOPLANKTON (% TOTAL)	#1	KERATELLA 50%	CONOCHILUS 55%
	#2	NAUPLIUS LARVA 20%	KERATELLA 13%
	#3	CALANOID COPEPOD 11%	NAUPLIUS LARVA 11%
ROTIFERS/LITER		197	791
MICROCRUSTACEA/LITER		134	256
ZOOPLANKTON ABUNDANCE (#/L)		343	1094
VASCULAR PLANT ABUNDANCE			Scattered
SECCHI DISK TRANSPARENCY (m)			1.7
BOTTOM DISSOLVED OXYGEN (mg/L)		2.1	0.3
BACTERIA (E. coli, #/100 ml)	#1		40
	#2		5
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 4.7  
Hypolimnion volume (m<sup>3</sup>): 40500  
Anoxic volume (m<sup>3</sup>): 122000

**CHEMICAL:**

Lake: CAPTAIN POND

Town: SALEM

	19 February 2003		28 August 2002		
DEPTH (m)	2.0	6.0	2.0	5.0	7.0
pH (units)	6.1	6.0	6.9	6.5	6.5
A.N.C. (Alkalinity)	8.3	9.0	16.1	12.7	30.4
NITRATE NITROGEN	0.11	0.16	< 0.05		0.07
TOTAL KJELDAHL NITROGEN	0.30	0.40	1.00	0.80	1.10
TOTAL PHOSPHORUS	0.011	0.012	0.026	0.041	0.051
CONDUCTIVITY ( $\mu$ mhos/cm)	233.0	237.0	246.0	244.0	248.0
APPARENT COLOR (cpu)	55	55	38	38	150
MAGNESIUM			2.75		
CALCIUM			11.7		
SODIUM			27.5		
POTASSIUM			2.59		
CHLORIDE	53	52	54		51
SULFATE	10	10	10		3
TN : TP	37	47	38		23
CALCITE SATURATION INDEX			2.1		

All results in mg/L unless indicated otherwise

**TROPHIC CLASSIFICATION: 2002**

D.O. S.D. PLANT CHL TOTAL CLASS

4	4	1	1	10	Meso.
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**COMMENTS:**

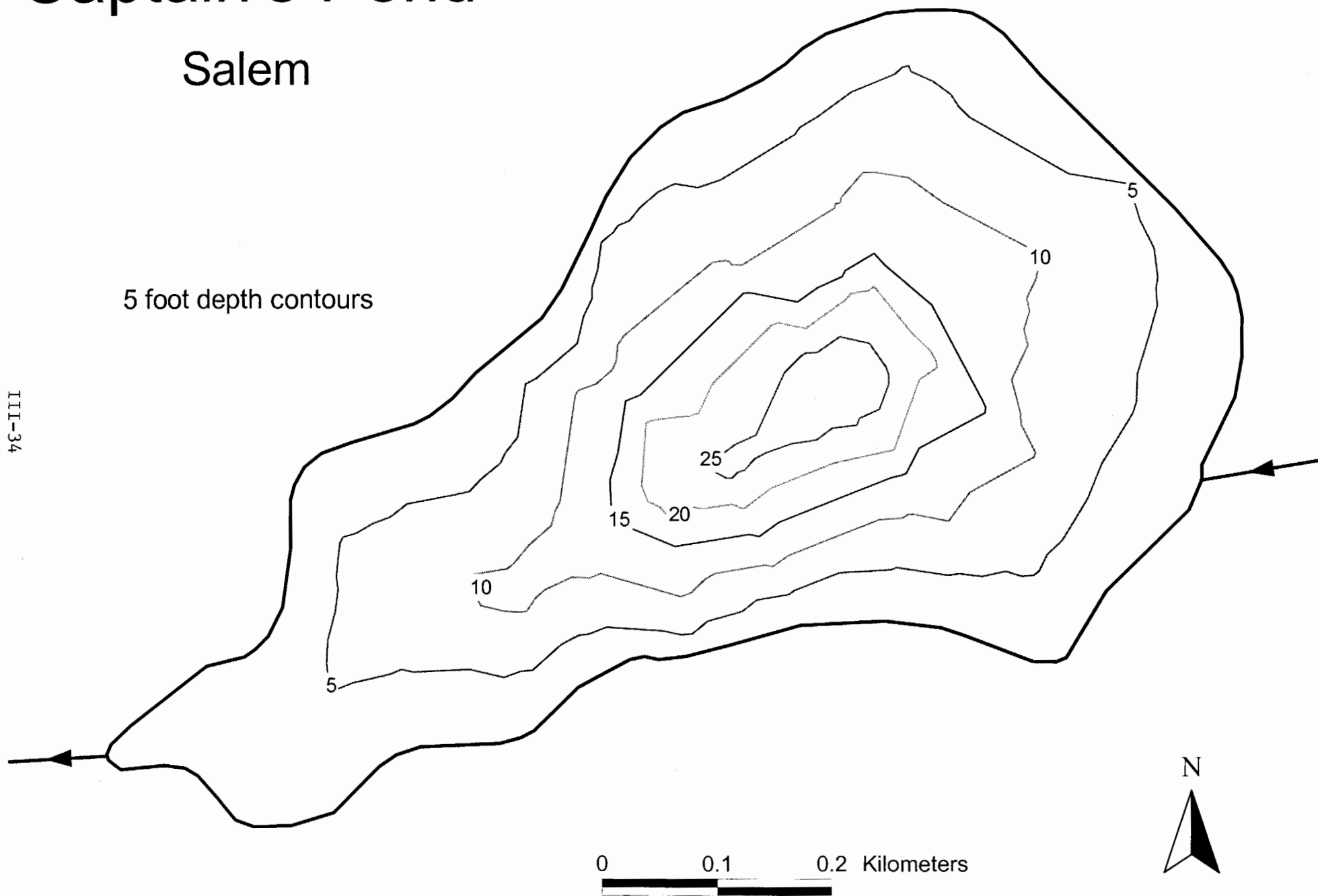
1. Previously surveyed in 1976 and 1987, and a participant in VLAP since 2001. The pond has remained in the mesotrophic category over the 26 year period, although the trophic parameters have varied through the years.
2. No public access; need key from lake association to use the private boat launch.
3. Elevated levels of Na, Cl and conductivity suggest road salt runoff to the pond. Other cations were also elevated, typical of southeast NH urban ponds.
4. Phosphorus was elevated in the bottom waters during the summer.
5. Although the chlorophyll was not high, the blue-green alga *Coelosphaerium* was the dominant net phytoplankton in both winter and summer.

# Captain's Pond

Salem

5 foot depth contours

III-34



[illegible]

TOWN: SALEM  
WEATHER: Cool & breezy

[illegible]

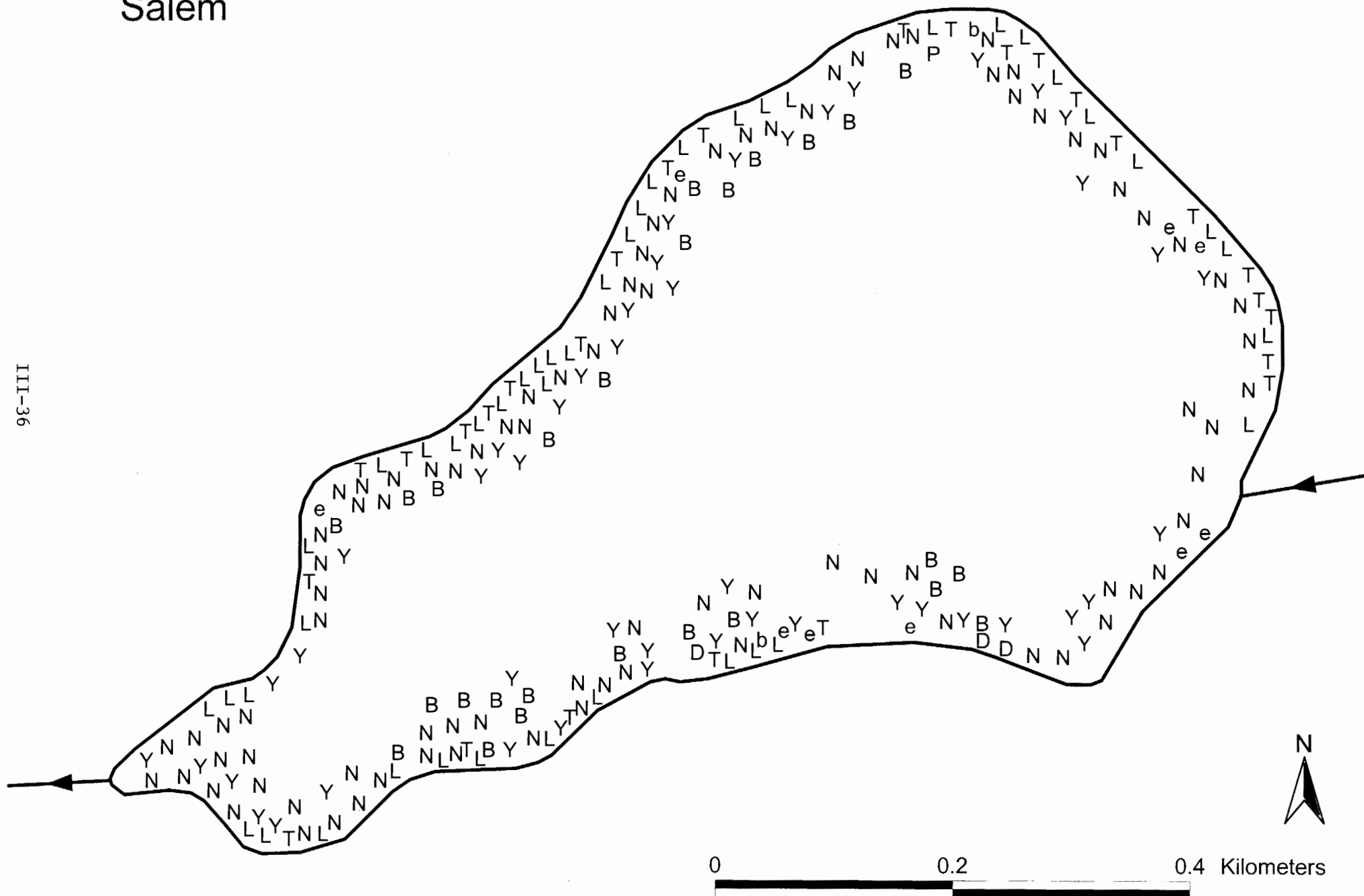
**COMMENTS:**

Essentially no D.O. below 4 meters – this includes the entire hypolimnion and most of the metalimnion.

\*Dissolved oxygen values are in mg/L

# Captain's Pond

Salem



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